



FRANKLIN REGIONAL RETIREMENT SYSTEM

ACTUARIAL VALUATION as of

January 1, 2016

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October 19, 2016

Franklin Regional Retirement Board
278 Main Street
Suite 311
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Dear Board Members:

We are pleased to present the enclosed report summarizing the results of our actuarial valuation of the Franklin Regional Retirement System as of January 1, 2016.

Our valuation was performed in accordance with the provisions contained in Chapter 32 of the Massachusetts General Laws, "M.G.L.", as of January 1, 2016. Disclosures under GASB Statement No. 67, Financial Reporting for Pension Plans (GASB 67) and GASB Statement No. 68, Accounting and Financial Reporting for Pensions (GASB 68) are provided in a separate report.

The principal results of our valuation are summarized in Section 2. The summary of Plan provisions and actuarial methods and assumptions are shown in Sections 5 and 6, respectively. Section 7 summarizes the demographic profile of active members, retired plan members and beneficiaries and disabled plan members. Asset information and actuarial liabilities are presented in Section 2. The development of the required appropriations pursuant to Chapter 32 of the M.G.L. is shown in Section 3. The summary of information for PERAC is presented in Section 4.

We also provide a 30-year forecast of the required appropriations and cash flows in Section 3.

Our actuarial valuation is based on an investment return rate of 7.75%, compounded annually. Our calculations were based on participant census and asset data and other information provided by the Franklin Regional Retirement System and the benefit provisions of Chapter 32 of the M.G.L. as of January 1, 2016.

K M S A C T U A R I E S

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Our valuation follows generally accepted actuarial methods and we perform such tests as we consider necessary to assure the accuracy of the results. The amounts presented in this report have been appropriately determined according to the actuarial assumptions and methods stated herein.

We appreciate this opportunity to be of service to the Franklin Regional Retirement Board. We are available to answer any questions with respect to our valuation.

Respectfully submitted,



Linda L. Bournival, FSA

Member, American Academy of Actuaries

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ACTUARIAL CERTIFICATION

This report presents the results of the Actuarial Valuation for the Franklin Regional Retirement System as of January 1, 2016. The report presents the funding schedule contribution amounts for the fiscal years beginning 2018.

This valuation is based upon member data provided by the Retirement Board and asset information reported to the Public Employee Retirement Administration Commission (PERAC) by the Franklin Regional Retirement System. Although we did not audit the data used in the valuation, we believe that the information is complete and reliable.

Future actuarial valuation results may differ significantly from the current results presented in this report. Examples of potential sources of volatility include plan experience differing from that anticipated by the economic or demographic assumptions, the effect of new entrants, changes in economic or demographic assumptions, the effect of law changes and the delayed effect of smoothing techniques.

This report was completed in accordance with generally accepted actuarial standards and procedures, and conforms to the Code of Professional Conduct of the American Academy of Actuaries. The actuarial assumptions used in the determination of costs are reasonably related to the experience of the System and to reasonable expectations, and represent our best estimate of anticipated long-term experience under the System.

This report is intended for the sole use of the Franklin Regional Retirement System and is intended to provide information to comply with the stated purpose of the report. It may not be appropriate for other purposes.

The undersigned credentialed actuaries are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinion contained herein. They are available to answer any questions with regard to this report.

Respectfully submitted,



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SECTION 1 - SUMMARY

Background

We have completed the Actuarial Valuation of the Franklin Regional Retirement System as of January 1, 2016. This valuation is based upon census data provided by the Retirement Board and asset information reported to the Public Employee Retirement Administration Commission (PERAC) by the Franklin Regional Retirement Board. Information for the prior valuation completed as of January 1, 2014 was obtained from the valuation report prepared by KMS Actuaries.

Massachusetts General Laws

The valuation was prepared in accordance with Chapter 32 of the Massachusetts General Laws ("M.G.L."). The results are based on the active, inactive and retired members and beneficiaries as of January 1, 2016, the assets as of December 31, 2015 and assumptions regarding investment returns, salary increases, death, turnover, disability and retirement.

The valuation does not take into consideration:

- Changes in the law after the valuation date,
- Transfers between retirement systems pursuant to Section 3(8)(c) of Chapter 32,
- State-mandated benefits and
- Cost-of-living increases granted to members in pay status between 1982 and 1997.

GASB Statement Numbers 67 and 68

In June 2012, the GASB approved two related Statements that significantly change the way pension plans and governments will account and report pension liabilities. Effective for plans with fiscal years beginning after June 15, 2013, GASB Statement No. 67, Financial Reporting for Pension Plans, replaces the requirements of Statement No. 25 and effective for employers with fiscal years beginning after June 15, 2014, GASB Statement No. 68, Accounting and Financial Reporting for Pensions, replaces the requirements of Statement No. 27.

The new pension standards reflect changes from those currently in place regarding how governments calculate total pension liability and pension expense. Further, the new standards contain requirements for disclosing information in the notes to financial statements and presenting required supplementary information following the notes.

The required disclosures and notes under the new GASB Statements for the fiscal year ending December 31, 2015 are provided in a separate report.

SECTION 1 - SUMMARY

Actuarial Valuation

During the two years since the last valuation, the total unfunded actuarial accrued liability of the System was expected to decrease from \$45,743,843 as of January 1, 2014 to \$43,830,496 as of January 1, 2016, for a total decrease of \$1,913,347. The actual unfunded actuarial accrued liability, before any assumption or plan changes, was \$42,085,704, resulting in an actuarial gain of \$1,744,792. The actuarial gain was primarily due to an asset gain of \$4,963,402 and a demographic experience loss of \$3,218,610. The details of the gain and loss analysis are provided in Exhibit 2.6.

Appropriations

The funding appropriation for each year is computed as the sum of the normal cost and an amortization payment to pay off the Unfunded Actuarial Liability, adjusted for semi-annual payments of the appropriation made at the beginning of each fiscal year. The appropriation calculated as of the January 1, 2016 valuation is \$6,312,651, and is made up of a normal cost payment of \$2,255,535, an amortization payment of \$3,615,938 and net 3(8)(c) transfers of \$441,178. The amortization method is an increasing amortization of the unfunded actuarial accrued liability at 4% over 19 years and is expected to fully pay the unfunded actuarial accrued liability by the year 2035. The development of the appropriation as of January 1, 2016 is presented in Exhibit 3.1.

For fiscal year 2017, we show the actual appropriation developed under the previous funding schedule and reported on the PERAC "Required Fiscal Year Appropriation" letter dated November 30, 2015 of \$5,941,329. For fiscal year 2018, we developed an annual appropriation of \$6,268,103, which is made up of a normal cost of \$2,480,391 and payment toward the unfunded actuarial accrued liability of \$3,787,712. The unfunded actuarial accrued liability is expected to be fully paid by 2035. The Board adopted a schedule that limits the annual increase in appropriations to 5.5% for each year. The current funding schedule is shown in Exhibit 3.2.

SECTION 1 - SUMMARY

A summary of principal valuation results from the current valuation and the prior valuation follows. Changes in actuarial assumptions and methods and Plan provisions are discussed below, as well as changes in census data and asset information.

Valuation Date	<u>1/1/2016</u>	<u>1/1/2014</u>	<u>Increase/ (Decrease)</u>
Summary of Member Data			
Active Members	933	928	0.5%
Average Age	48.3	48.3	0.0%
Average Service	10.5	10.5	0.0%
Total Salary	\$33,556,164	\$30,854,652	8.8%
Average Salary	\$35,966	\$33,249	8.2%
Retired Members and Beneficiaries	528	502	5.2%
Average Age	72.3	72.1	0.3%
Total Annual Pension	\$8,064,636	7,110,114	13.4%
Average Annual Pension	\$15,274	\$14,164	7.8%
State Reimbursed COLAs	\$38,478	48,505	(20.7%)
Total System-Funded Pension	\$8,026,158	\$7,061,609	13.7%
Disabled Members	22	18	22.2%
Average Age	58.0	56.4	2.8%
Total Annual Pension	\$579,767	468,928	23.6%
Average Annual Pension	\$26,353	\$26,052	1.2%
State Reimbursed COLAs	\$5,983	5,983	0.0%
Total System-Funded Pension	\$573,784	\$462,945	23.9%
Inactive Members	564	563	0.2%
Annuity Savings Fund	3,384,545	\$3,500,750	(3.3%)
Funded Status - Market Value of Assets			
Actuarial Accrued Liability (AAL)	\$171,142,677	\$151,531,013	12.9%
Market Value of Assets (MVA)	\$118,210,146	\$114,408,871	3.3%
Unfunded Accrued Liability	\$52,932,531	\$37,122,142	42.6%
Funded Status	69.1%	75.5%	(8.5%)
Funded Status - Actuarial Value of Assets			
Actuarial Accrued Liability (AAL)	\$171,142,677	\$151,531,013	12.9%
Actuarial Value of Assets (AVA)	122,196,803	105,787,170	15.5%
Unfunded Accrued Liability	\$48,945,874	\$45,743,843	7.0%
Funded Status	71.4%	69.8%	2.3%

SECTION 1 - SUMMARY

Valuation Date	<u>1/1/2016</u>	<u>1/1/2014</u>	<u>Increase/ (Decrease)</u>
Normal Cost			
Employer	\$1,805,535	\$1,473,317	22.5%
Employee	3,027,494	2,891,670	4.7%
Administrative Expenses	450,000	450,000	0.0%
Total Normal Cost	\$5,283,029	\$4,814,987	9.7%
Appropriations			
Fiscal Year 2016	N/A	\$5,727,313	N/A
Fiscal Year 2017	\$5,941,329	\$5,941,329	0.0%
Fiscal Year 2018	\$6,268,103	\$6,164,097	1.7%
Fiscal Year 2019	\$6,612,848	\$6,395,976	3.4%

Actuarial Assumptions and Methods

Most of the Actuarial Assumptions and Methods used in this valuation are the same as those used in the last valuation, except the mortality tables and mortality improvement scales and the salary scales for both Group 1 and Group 4 employees have changed. Changing these assumptions resulted in a net increase in the unfunded actuarial accrued liability of \$5,059,760. The Actuarial Assumptions and Methods utilized in this valuation are detailed in Section 6, Actuarial Assumptions and Methods.

Plan Provisions

The COLA base was increased from \$15,000 to \$17,000 effective July 1, 2016. Changing these plan provisions resulted in a net increase in the unfunded actuarial accrued liability of \$1,800,410. All Plan provisions used in this valuation are detailed in Section 5, Summary of Plan Provisions.

Census Data

As of January 1, 2016, there are 933 active members who may be eligible for benefits in the future, 528 retirees and beneficiaries, 564 inactives and 22 disabled retirees. Summaries of the active, retired and disabled members are included in Section 7, Demographic Information.

Assets

This valuation is based upon asset information reported to the Public Employee Retirement Administration Commission (PERAC) by the Franklin Regional Retirement Board. The market value of assets increased from \$114,408,871 as of January 1, 2014 to \$118,210,146 as of January 1, 2016. During the plan years ended 2014 and 2015, the rates of return on the market value of assets were 7.41% and 0.50%, respectively.

The actuarial value of assets increased from \$105,787,170 as of January 1, 2014 to \$122,196,803 as of January 1, 2016. During the plan years ended 2014 and 2015, the rates of return on the actuarial value of assets were 10.35% and 9.56%, respectively.

SECTION 2 - PRINCIPAL VALUATION RESULTS

Exhibit 2.1 - Plan Assets

Asset information is reported annually to the Public Employee Retirement Administration Commission by the Franklin Regional Retirement System. The Market Value of Assets for the two most recent calendar years are as follows:

Calendar Year	2015	2014
Trust Fund Composition at Year-End		
Cash	\$1,027,504	\$1,370,581
Short-Term Investments	0	0
Fixed Income Securities	0	0
Equities	24,890,203	26,876,340
Pooled Short Term Funds	0	0
Pooled Domestic Equity Funds	5,310,656	5,690,978
Pooled International Equity Funds	5,587,647	5,382,799
Pooled Global Equity Funds	0	0
Pooled Domestic Fixed Income Funds	12,801,913	12,726,981
Pooled International Fixed Income Funds	0	0
Pooled Global Fixed Income Funds	0	0
Pooled Alternative Investments	0	0
Pooled Real Estate Funds	12,730,489	12,341,060
Pooled Domestic Balanced Funds	0	0
Pooled International Balanced Funds	0	0
Hedge Funds	0	0
PRIT Cash	0	0
PRIT Fund	56,789,798	55,311,285
Interest Due & Accrued	102	2
Prepaid Expenses	6,399	4,821
Accounts Receivable	442,395	518,865
Land	0	0
Buildings	0	0
Accumulated Depreciation - Buildings	0	0
Accounts Payable	(1,376,958)	(81,595)
Total Market Value of Assets	<u>\$118,210,146</u>	<u>\$120,142,118</u>

SECTION 2 - PRINCIPAL VALUATION RESULTS

Exhibit 2.1 - Plan Assets

Calendar Year	2015	2014
Funds		
Annuity Savings Fund	\$28,029,622	\$26,866,304
Annuity Reserve Fund	9,122,716	8,923,778
Military Service Fund	0	0
Pension Fund	3,241,238	4,973,742
Expense Fund	0	0
Pension Reserve Fund	77,816,570	79,378,294
Total Market Value of Assets	<u>\$118,210,146</u>	<u>\$120,142,118</u>
Asset Activity		
Market value as of Beginning of Year	\$120,142,118	\$114,408,871
Contributions and Receipts	9,643,365	9,155,436
Benefit Payments and Expenses	(12,170,009)	(11,801,498)
Investment Return	594,672	8,379,309
Market Value as of End of Year	\$118,210,146	\$120,142,118
Computed Rate of Return	0.50%	7.41%

Returns and annualized past returns developed by PERAC are shown below. Information is obtained from the Annual Investment Reports published by PERAC for the years shown.

Year	1-Year Return	5-Year Return	Return (Since 1985)
2015	1.11%	8.49%	8.34%
2014	8.42%	11.39%	8.59%
2013	19.80%	13.33%	8.59%
2012	13.39%	2.69%	8.21%
2011	0.92%	2.28%	8.02%
2010	15.38%	4.69%	8.31%
2009	18.20%	3.26%	8.03%
2008	-26.82%	1.56%	7.63%
2007	11.13%	11.57%	9.45%
2006	13.40%	7.34%	9.37%
2005	7.70%	5.19%	9.19%
2004	8.77%	4.54%	9.26%

SECTION 2 - PRINCIPAL VALUATION RESULTS

Exhibit 2.1 - Plan Assets

Valuation Date	1/1/2016	1/1/2015
1. Market Value of Assets as of prior January 1	\$120,142,118	\$114,408,871
a. Prior Year Contributions and Receipts	9,643,365	9,155,436
b. Prior Year Benefit Payments and Expenses	(12,170,009)	(11,801,498)
c. Expected Investment Return Rate	7.750%	7.750%
d. Expected Investment Return	9,213,107	8,764,153
e. Expected Market Value of Assets as of Valuation Date	\$126,828,581	\$120,526,962
2. Prior Year Gain / (Loss)		
a. Market Value of Assets as of January 1	\$118,210,146	\$120,142,118
b. Expected Market Value of Assets	126,828,581	120,526,962
c. Prior Year Gain / (Loss)	(8,618,435)	(384,844)
3. Phase-In of Asset Gains and Losses		
Plan Year	Gain / (Loss)	Unrecognized Gain / (Loss)
a. 2015	(\$8,618,435)	(\$6,463,827)
b. 2014	(384,844)	(192,422)
c. 2013	10,678,368	2,669,592
d. 2012	4,552,396	-
e. 2011	(6,653,093)	-
f. Total deferred gains/(losses)		(3,986,657)
		6,188,650
4. Actuarial Value of Assets		
a. Market Value of Assets Less Unrecognized Gain / (Loss)	\$122,196,803	\$113,953,468
b. 90% of Market Value of Assets	106,389,131	108,127,906
c. 110% of Market Value of Assets	130,031,160	132,156,330
d. Actuarial Value of Assets, a., but not less than b. and not greater than c.	\$122,196,803	\$113,953,468
e. Ratio of Actuarial Value of Assets to Market Value of Assets	103.37%	94.85%
5. Rate of Return on Actuarial Value of Assets for Prior Calendar Year	9.56%	10.35%

SECTION 2 - PRINCIPAL VALUATION RESULTS

The **Actuarial Present Value of Future Benefits** is the present value of the cost to finance all benefits payable in the future, discounted to reflect the probability of payment and the time value of money. Below is the Actuarial Present Value of Future Benefits from the current valuation and the prior valuation:

Exhibit 2.2 - Actuarial Present Value of Future Benefits

Valuation Date	<u>1/1/2016</u>	<u>1/1/2014</u>
Actives		
Superannuation	\$95,167,438	\$84,325,332
Termination	4,424,299	4,285,430
Death	4,866,747	6,848,707
Disability	12,252,557	11,006,604
Total Actives	<u>\$116,711,041</u>	<u>\$106,466,073</u>
Retired Members and Inactives		
Retired Members and Beneficiaries	\$82,677,015	\$70,811,128
Disabled Members	7,600,898	5,980,924
Inactive Members	3,384,545	3,500,750
Total Retired Members and Inactives	<u>\$93,662,458</u>	<u>\$80,292,802</u>
Total Present Value of Future Benefits	\$210,373,499	\$186,758,875

The **Actuarial Accrued Liability** is the portion of the Actuarial Present Value of Future Benefits which is allocated to all periods prior to a valuation year and therefore is not provided for by future Normal Costs. Below is the Actuarial Accrued Liability from the current valuation and the prior valuation:

Exhibit 2.3 - Actuarial Accrued Liability

Valuation Date	<u>1/1/2016</u>	<u>1/1/2014</u>
Actives		
Superannuation	\$67,295,174	\$59,987,723
Termination	3,128,528	3,048,588
Death	1,946,795	3,389,210
Disability	5,109,722	4,812,690
Total Actives	<u>\$77,480,219</u>	<u>\$71,238,211</u>
Retired Members and Inactives		
Retired Members and Beneficiaries	\$82,677,015	\$70,811,128
Disabled Members	7,600,898	5,980,924
Inactive Members	3,384,545	3,500,750
Total Retired Members and Inactives	<u>\$93,662,458</u>	<u>\$80,292,802</u>
Total Actuarial Accrued Liability	\$171,142,677	\$151,531,013

SECTION 2 - PRINCIPAL VALUATION RESULTS

The **Normal Cost** is the portion of the Actuarial Present Value of Future Benefits which is allocated to a valuation year. Only active employees who have not reached Normal Retirement Age incur a Normal Cost. Below is the Normal Cost from the current valuation and the prior valuation:

Exhibit 2.4 - Normal Cost

Valuation Date	<u>1/1/2016</u>	<u>1/1/2014</u>
Actives		
Superannuation	\$2,942,054	\$2,531,934
Termination	701,663	672,833
Death	370,380	444,991
Disability	818,932	715,229
Total Actives	<u>\$4,833,029</u>	<u>\$4,364,987</u>
As a Percentage of Salary	14.4%	14.1%
Administrative Expenses	\$450,000	\$450,000
As a Percentage of Salary	1.3%	1.5%
Total Normal Cost		
Normal Cost	\$5,283,029	\$4,814,987
As a Percentage of Salary	15.7%	15.6%
Employee Normal Cost		
Employee Contributions	\$3,027,494	\$2,891,670
As a Percentage of Salary	9.0%	9.4%
Employer Normal Cost		
Employer Normal Cost	\$2,255,535	\$1,923,317
As a Percentage of Salary	6.7%	6.2%

Exhibit 2.5 - Unfunded Actuarial Accrued Liability

Valuation Date	<u>1/1/2016</u>	<u>1/1/2014</u>
Unfunded Actuarial Accrued Liability		
a. Actuarial Accrued Liability	\$171,142,677	\$151,531,013
b. Actuarial Value of Assets	122,196,803	105,787,170
c. Unfunded Actuarial Accrued Liability (a. - b.)	\$48,945,874	\$45,743,843
d. Funded Ratio (b. divided by a.)	71.4%	69.8%

SECTION 2 - PRINCIPAL VALUATION RESULTS

Exhibit 2.6 - Actuarial Experience

In performing the actuarial valuation, various assumptions are made regarding mortality, retirement, disability and withdrawal rates as well as salary increases and investment returns. A comparison of the results of the current valuation and the prior valuation is made to determine how closely actual experience relates to expected. During the two years since the last valuation, the total unfunded actuarial accrued liability of the System was expected to decrease by \$1,913,347. Below is the development of the Actuarial Gain or Loss for the current 2-year period:

Calendar Year Ending	<u>12/31/2015</u>	<u>12/31/2014</u>
Expected Unfunded Actuarial Accrued Liability		
a. Unfunded Actuarial Accrued Liability, beginning of year	\$44,966,930	\$45,743,843
b. Normal cost, beginning of year	\$5,007,586	4,814,987
c. Total contributions	9,643,365	9,155,436
d. Interest (full year on a. and b., one-half year on c.)	3,499,345	3,563,536
e. Expected Unfunded Actuarial Accrued Liability	\$43,830,496	\$44,966,930
f. Unfunded Actuarial Accrued Liability (before changes)	\$42,085,704	
g. (Gain)/Loss	(\$1,744,792)	
Asset (gain)/loss		
a. Actuarial value of assets, beginning of year	\$113,953,468	\$105,787,170
b. Contributions and Receipts	9,643,365	9,155,436
c. Benefit Payments and Expenses	(12,170,009)	(11,801,498)
d. Assumed rate of return	7.750%	7.750%
e. Expected return	8,733,486	8,095,971
f. Actuarial value of assets, end of year	122,196,803	113,953,468
g. Actual return	10,769,979	10,812,360
h. Actual rate of return	9.56%	10.35%
i. Asset (gain)/loss	(\$2,036,492)	(\$2,716,389)
j. Total asset (gain)/loss, 2-year period	(\$4,963,402)	
Actual Unfunded Actuarial Accrued Liability		
a. Changes due to:		
i) Asset (gain)/loss	(\$4,963,402)	
ii) (Gain)/loss from demographic experience	3,218,610	
iii) (Gain)/loss prior to changes	(1,744,792)	
iv) Plan change - increase COLA base	1,800,410	
v) Assumption change - mortality tables	5,021,222	
vi) Assumption change - salary scale	38,538	
vii) Total changes	5,115,378	
b. Unfunded Actuarial Accrued Liability, end of year	\$48,945,874	

SECTION 3 - CHAPTER 32 OF M.G.L. APPROPRIATIONS

Exhibit 3.1 - Annual Appropriations

The **Annual Appropriation** is determined in accordance with the requirements set forth in Section 22D and Section 22F of Chapter 32 of the Massachusetts General Laws ("M.G.L."). The appropriation is comprised of the annual employer normal cost and amortization payments to pay the unfunded actuarial accrued liability. Below are the details of the annual appropriation for the current valuation.

Amortization Payments	<u>1/1/2016</u>
a. Early Retirement Incentive (2002)	
Fully Funded Year	2019
Balance as of valuation date	\$376,481
Amortization Amount	\$134,969
Remaining Payment Period	3
b. Early Retirement Incentive (2003)	
Fully Funded Year	2020
Balance as of valuation date	\$145,273
Amortization Amount	\$40,480
Remaining Payment Period	4
c. Remaining Unfunded Actuarial Liability	
Fully Funded Year	2035
Balance as of valuation date	\$48,424,120
Amortization Amount	\$3,440,489
Remaining Payment Period	19
d. Total Amortization Payments	\$3,615,938
Normal Cost	\$2,255,535
Net 3(8)(c) Transfers	\$441,178
Total Appropriation as of January 1, 2016	\$6,312,651
Adjusted for Semi-Annual Payments	\$6,674,967

SECTION 3 - CHAPTER 32 OF M.G.L. APPROPRIATIONS

Exhibits 3.2 and 3.3, are based on the assumptions below:

Exhibit 3.2:

- Employer Normal Cost is expected to increase 4% per year.
- The Unfunded Actuarial Accrued Liability ("UAL") is computed as of January 1 of each year assuming no future gains or losses.
- The Amortization Payment of UAL is to be paid over 19 years through 2035.
- The Amortization Payment of the Early Retirement Incentive programs (ERI) is a level amortization of the UAL attributable to the ERI programs for 2002 and 2003 over 3 years and 4 years, respectively.
- Net 3(8)(c) transfers are a level dollar amount based on the net transfers expected to be paid by the Franklin Regional Retirement Board during the current year offset by the amount received during the same period.
- Total Employer Cost is the sum of the Employer Normal Cost, the Amortization Payments of the UAL and the ERI programs and the Net 3(8)(c) Transfers, all computed as of January 1 of each year and adjusted for semi-annual payments made on July 1 and January 1. The increase in annual appropriations is further limited to 5.5% per year.
- For fiscal year 2017, we show the actual appropriation developed under the previous funding schedule of \$5,941,329.

Exhibit 3.3:

- Expected benefit payments include payments expected to be made to retired members, beneficiaries, disabled members and active members expected to retire. In addition, expected benefit payments include distribution of the annuity savings fund attributed to inactive members.
- Benefit payments exclude cost-of-living increases granted to members in pay status between 1982 and 1997. In addition, benefit payments are as expected for the first ten years of the forecast, then increase by the greater of 4.50% per year thereafter or the expected future payments for the current population projected by our computer model.
- Calendar year cash flow entries are developed as of each January 1.

SECTION 3 - CHAPTER 32 OF M.G.L. APPROPRIATIONS

Exhibit 3.2 - 30-Year Forecast of Annual Appropriations

Fiscal Year Ending	Employer Normal Cost	Amortization Payment of UAL	Amortization Payment of ERI 2002	Amortization Payment of ERI 2003	Net 3(8)(c) Transfers	Total Employer Cost	Unfunded Actuarial Accrued Liability
2017	\$2,384,992	\$2,904,319	\$142,715	\$42,803	\$466,500	\$5,941,329	48,945,874
2018	2,480,391	3,135,693	142,716	42,803	466,500	6,268,103	49,590,593
2019	2,579,606	3,381,223	142,716	42,803	466,500	6,612,848	50,049,505
2020	2,682,790	3,784,462	-	42,803	466,500	6,976,555	50,293,784
2021	2,790,103	4,103,664	-	-	466,500	7,360,267	50,291,517
2022	2,901,706	4,396,876	-	-	466,500	7,765,082	50,007,420
2023	3,017,775	4,707,885	-	-	466,500	8,192,160	49,402,519
2024	3,138,487	5,037,743	-	-	466,500	8,642,730	48,433,816
2025	3,264,025	5,365,854	-	-	466,500	9,096,379	47,053,909
2026	3,394,588	5,580,488	-	-	466,500	9,441,576	45,232,710
2027	3,530,371	5,803,707	-	-	466,500	9,800,578	43,051,653
2028	3,671,586	6,035,855	-	-	466,500	10,173,941	40,474,100
2029	3,818,449	6,277,290	-	-	466,500	10,562,239	37,460,225
2030	3,971,187	6,528,381	-	-	466,500	10,966,068	33,966,749
2031	4,130,033	6,789,517	-	-	466,500	11,386,050	29,946,663
2032	4,295,234	7,061,097	-	-	466,500	11,822,831	25,348,920
2033	4,467,045	7,343,541	-	-	466,500	12,277,086	20,118,108
2034	4,645,726	7,637,283	-	-	466,500	12,749,509	14,194,094
2035	4,831,556	7,942,773	-	-	466,500	13,240,829	7,511,641
2036	5,024,818	-	-	-	466,500	5,491,318	-
2037	5,225,811	-	-	-	466,500	5,692,311	-
2038	5,434,844	-	-	-	466,500	5,901,344	-
2039	5,652,238	-	-	-	466,500	6,118,738	-
2040	5,878,327	-	-	-	466,500	6,344,827	-
2041	6,113,460	-	-	-	466,500	6,579,960	-
2042	6,357,998	-	-	-	466,500	6,824,498	-
2043	6,612,318	-	-	-	466,500	7,078,818	-
2044	6,876,811	-	-	-	466,500	7,343,311	-
2045	7,151,884	-	-	-	466,500	7,618,384	-
2046	7,437,960	-	-	-	466,500	7,904,460	-

Franklin Regional Retirement System
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SECTION 3 - CHAPTER 32 OF M.G.L. APPROPRIATIONS

Exhibit 3.3 - 30-Year Forecast of Cash Flow

Calendar Year	Assets, BOY	Benefit Payments	Employee Contributions	Employer Contributions	Investment Return	Assets, EOY
2016	\$118,210,146	\$12,792,611	\$3,027,494	\$5,618,835	\$9,335,663	\$123,399,526
2017	123,399,526	9,987,187	3,148,594	5,927,871	9,879,886	132,368,690
2018	132,368,690	10,630,052	3,274,538	6,253,904	10,585,113	141,852,193
2019	141,852,193	11,266,411	3,405,520	6,597,869	11,332,234	151,921,405
2020	151,921,405	11,907,690	3,541,741	6,960,752	12,126,429	162,642,637
2021	162,642,637	12,626,163	3,683,411	7,343,594	12,970,133	174,013,612
2022	174,013,612	13,365,964	3,830,747	7,747,491	13,865,437	186,091,323
2023	186,091,323	14,102,634	3,983,977	8,173,603	14,817,813	198,964,082
2024	198,964,082	14,863,188	4,143,336	8,602,629	15,831,580	212,678,439
2025	212,678,439	15,643,290	4,309,069	8,929,088	16,902,359	227,175,665
2026	227,175,665	16,459,212	4,481,432	9,268,604	18,033,947	242,500,436
2027	242,500,436	17,274,681	4,660,689	9,621,701	19,231,275	258,739,420
2028	258,739,420	18,095,196	4,847,117	9,988,922	20,500,909	275,981,172
2029	275,981,172	18,909,480	5,041,002	10,370,831	21,850,216	294,333,741
2030	294,333,741	19,760,407	5,242,642	10,768,017	23,285,975	313,869,968
2031	313,869,968	20,649,625	5,452,348	11,181,090	24,813,841	334,667,622
2032	334,667,622	21,578,858	5,670,442	11,610,687	26,439,847	356,809,740
2033	356,809,740	22,549,907	5,897,260	12,057,468	28,170,437	380,384,998
2034	380,384,998	23,564,653	6,133,150	12,522,119	30,012,490	405,488,104
2035	405,488,104	24,625,062	6,378,476	5,193,250	31,367,916	423,802,684
2036	423,802,684	25,733,190	6,633,615	5,383,333	32,778,860	442,865,302
2037	442,865,302	26,891,184	6,898,960	5,581,019	34,247,226	462,701,323
2038	462,701,323	28,101,287	7,174,918	5,786,613	35,774,946	483,336,513
2039	483,336,513	29,365,845	7,461,915	6,000,430	37,363,985	504,796,998
2040	504,796,998	30,687,308	7,760,392	6,222,800	39,016,332	527,109,214
2041	527,109,214	32,068,237	8,070,808	6,454,065	40,733,998	550,299,848
2042	550,299,848	33,511,308	8,393,640	6,694,581	42,519,012	574,395,773
2043	574,395,773	35,019,317	8,729,386	6,944,717	44,373,417	599,423,976
2044	599,423,976	36,595,186	9,078,561	7,204,859	46,299,260	625,411,470
2045	625,411,470	38,241,969	9,441,703	7,475,407	48,298,589	652,385,200

Franklin Regional Retirement System
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SECTION 4 - REQUIRED DISCLOSURES

Exhibit 4.1 - GASB 67 and GASB 68 Disclosures

In June 2012, the GASB approved two related Statements that significantly changed the way pension plans and governments account and report pension liabilities. Effective for plans with fiscal years beginning after June 15, 2013, GASB Statement No. 67, *Financial Reporting for Pension Plans*, replaced the requirements of Statement No. 25 and effective for employers with fiscal years beginning after June 15, 2014, GASB Statement No. 68, *Accounting and Financial Reporting for Pensions*, replaced the requirements of Statement No. 27.

The new pension standards reflect changes from those currently in place regarding how governments calculate total pension liability and pension expense. Further, the new standards contain requirements for disclosing information in the notes to financial statements and presenting required supplementary information following the notes.

GASB 67 requires defined benefit pension plans, such as the Franklin Regional Retirement System, to present a statement of fiduciary net position (pension plan assets) and a statement of changes in fiduciary net position. Further, the statement requires that notes to financial statements include descriptive information such as the types of benefits provided, the classes of plan members covered and the composition of the pension plan's retirement board. Finally, GASB 67 requires pension plans to present in required supplementary information the sources of the changes in the net pension liability and information about the actuarially determined contributions compared with the actual contributions made to the plan and related ratios.

GASB 67 and GASB 68 require projected benefit payments be discounted to their actuarial present value using the single rate that reflects:

- (1) a long-term expected rate of return on pension plan investments *to the extent that the pension plan's assets are sufficient to pay benefits and pension plan assets are expected to be invested using a strategy to achieve that return and*
- (2) a tax-exempt, high-quality municipal bond rate *to the extent that the conditions for use of the long-term expected rate of return are not met.*

GASB 68 establishes standards for measuring and recognizing liabilities, deferred outflows of resources, deferred inflows of resources and pension expense by state and local governments.

The effective date for GASB 67 is for plan years beginning after June 15, 2013, which is fiscal year ending December 31, 2014 for the Franklin Regional Retirement System. The effective date for GASB 68 is for employers' fiscal years beginning after June 15, 2014. The GASB report, submitted under separate cover and prepared as of December 31, 2015 (the measurement date), presents information to assist the Franklin Regional Retirement System in providing the required information under GASB 68 to participating employers.

SECTION 4 - REQUIRED DISCLOSURES

The most recent actuarial valuation of the System was prepared by KMS Actuaries, LLC as of January 1, 2016.

The normal cost for employees on that date was:	\$3,027,494	9.0% of payroll
The normal cost for the employer was:	\$2,255,535	6.7% of payroll

The actuarial liability for active members was:	\$77,480,219
The actuarial liability for retired and inactive members was:	93,662,458
Total actuarial liability:	\$171,142,677
System assets as of that date:	\$122,196,803
Unfunded actuarial accrued liability:	\$48,945,874

The ratio of System assets to total actuarial accrued liability was:	71.4%
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The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	7.75%
Rate of Salary Increase:	Group 1: 6%-4.25%, based on service
	Group 4: 7%-4.75%, based on service

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Administration There are 105 contributory retirement systems for public employees in Massachusetts. Each system is governed by a retirement board and all boards, although operating independently, are governed by Chapter 32 of the Massachusetts General Laws and other applicable statutes. This law in general provides uniform benefits, uniform contribution requirements and a uniform accounting and funds structure for all systems.

Participation Participation is mandatory for all full-time employees. Eligibility with respect to part-time, provisional, temporary, seasonal or intermittent employment is governed by regulations promulgated by the local retirement board, and approved by PERAC. Membership is optional for certain elected officials.

There are four classes of membership in the Retirement System:

Group 1:	General employees, including clerical, administrative, technical and all other employees not otherwise classified.
Group 2:	Certain specified hazardous duty positions.
Group 3:	State police officers and inspectors.
Group 4:	Local police officers, firefighters and other specified hazardous positions.

For members in more than one group, participation will be proportional.

Member Contributions Member contributions vary depending on the most recent date of membership:

Prior to 1975:	5% of Salary
1975 – 1983:	7% of Salary
1984 – June 30, 1996:	8% of Salary
July 1, 1996 – present:	9% of Salary
1979 – present:	An additional 2% of Salary in excess of \$30,000.
Group 1 members hired on or after April 2, 2012:	6% of Salary with 30 or more years of creditable service.

Rate of Interest Interest on regular deductions made after January 1, 1984 is a rate established by PERAC in consultation with the Commissioner of Banks. The rate is obtained from the average rates paid on individual savings accounts by a representative sample of at least ten financial institutions.

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Retirement Age	The mandatory retirement age for some Group 2 and Group 4 members is age 65. Most Group 2 and Group 4 members may remain in service after reaching age 65. Group 4 members who are employed in certain public safety positions are required to retire at age 65. There is no mandatory retirement age for members in Group 1.
Salary	Gross regular compensation. This does not include bonuses, overtime, severance pay, unused sick leave credit or other similar compensation.
Average Salary	<p>Membership before April 2, 2012: Average annual rate of regular compensation received during the three consecutive years that produce the highest average, or, if greater, during the last three years (whether or not consecutive) preceding retirement.</p> <p>Membership on or after April 2, 2012: Average annual rate of regular compensation received during the five consecutive years that produce the highest average, or, if greater, during the last five years (whether or not consecutive) preceding retirement.</p>
Creditable Service	The period during which a member contributes to the retirement system plus certain periods of military service and "purchased" service.
Benefit Rate	The benefit rate varies with the member's retirement age, Group, membership date and years of creditable service at retirement. Each year a member retires prior to the age at which the 2.5% maximum benefit rate applies, a reduction is applied to each year of age under the maximum age. The maximum age and reduction for each Group and membership date is as follows:

	<u>Group 1</u>	<u>Group 2</u>	<u>Group 4</u>
2.5% for Membership before April 2, 2012:			
Maximum age:	65	60	55
Reduction:	0.1%	0.1%	0.1%
2.5% for Membership on or after April 2, 2012 (less than 30 years of service):			
Maximum age:	67	62	57
Reduction:	0.15%	0.15%	0.15%
2.5% for Membership on or after April 2, 2012 (30+ years of service):			
Maximum age:	67	62	57
Reduction:	0.125%	0.125%	0.125%

Franklin Regional Retirement System
Actuarial Valuation as of January 1, 2016

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Superannuation Retirement	Eligibility if membership before April 2, 2012:	<ul style="list-style-type: none"> • completion of 20 years of Creditable Service, or • attainment of age 55 if hired prior to 1978, or • attainment of age 55 with 10 years of Creditable Service, if hired after 1978.
	Eligibility if membership on or after April 2, 2012:	<ul style="list-style-type: none"> • attainment of age 60 with 10 years of Creditable Service if classified in Group 1 • attainment of age 55 with 10 years of Creditable Service if classified in Group 2 • attainment of age 55 if hired prior to 1978 or if classified in Group 4
	Benefit Amount	Product of the member's Benefit Rate, Average Salary and Creditable Service.
	Maximum Benefit	80% of the member's Average Salary.
	Veteran's Benefit	Additional benefit of \$15 per year of Creditable Service, up to a maximum of \$300.
Deferred Vested	Eligibility	<ul style="list-style-type: none"> • completion of ten or more years of Creditable Service. • elected officials hired prior to 1978, completion of six years of Creditable Service.
	Benefit Amount	Accrued benefit payable commencing at age 55, or the completion of 20 years of Creditable Service, or may be deferred until later at the participant's option.
Withdrawal of Contributions		<p>Contributions may be withdrawn upon termination of employment.</p> <ul style="list-style-type: none"> • Members who voluntarily terminate with at least ten years of creditable service will receive 100% of the regular interest that has accrued to the Annuity Savings Account. • Members who voluntarily terminate with fewer than ten years of creditable service will receive interest on the Annuity Savings Account at the annual rate of 3%.

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Ordinary Disability Retirement	Eligibility	Non-job related disability after completion of ten years of Creditable Service.
	Benefit Amount for Group 1 membership before April 2, 2012 or Group 2 or Group 4	Superannuation benefit determined if the member is age 55, up to a maximum of 80% of Average Salary over three years. If the member is a veteran, 50% of final rate of salary (final year) plus an annuity based on the accumulated member contributions plus credited interest, up to a maximum of 80% of Average Salary over five years.
	Benefit Amount for Group 1 membership on or after April 2, 2012	Superannuation benefit determined if the member is age 60, up to a maximum of 80% of Average Salary over three years. If the member is a veteran, 50% of final rate of salary (final year) plus an annuity based on the accumulated member contributions plus credited interest, up to a maximum of 80% of Average Salary over five years.
Accidental Disability Retirement	Eligibility	Disabled as a result of an accident in the performance of duties. There is no minimum age or service requirement.
	Benefit Amount	72% of Salary plus an annuity based on accumulated member contributions plus credited interest.
	Maximum Benefit	100% of Salary if hired before January 1, 1988, otherwise 75% of Salary.
	Veteran's Benefit	Additional allowance of \$15 per year of Creditable Service, up to a maximum of \$300.
	Supplemental Dependent Allowance	Additional allowance of \$415 per year for each child.

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Non-Occupational Death	Eligibility	For members with at least two years of creditable service who die while in active service, but not due to occupational injury.
	Benefit Amount	Benefit as if Option C had been elected. Minimum benefit of \$250 per month for surviving spouse, \$120 per month for first child and \$90 per month for each additional child.
Accidental Death	Eligibility	For members who die as a result of an occupational injury.
	Benefit Amount	72% of Salary plus an annuity based on accumulated member contributions plus credited interest.
	Maximum Benefit	100% of Salary if hired before January 1, 1988, otherwise 75% of Salary.
	Veteran's Benefit	Additional allowance of \$15 per year of creditable service, up to a maximum of \$300.
	Supplemental Dependent Allowance	Additional allowance of \$708.60 per year for each child until age 18 (or age 22 if a full-time student).
Cost-of-Living Adjustment (COLA)	In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a Cost-of-Living Adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees and beneficiaries who have been receiving benefit payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is \$17,000, effective July 1, 2016. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the Commonwealth of Massachusetts and are not the liability of the Retirement System.	

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Optional Forms of Payment

A member may elect to receive his or her retirement allowance in one of three forms of payment:

- Option A – Life annuity.
- Option B – Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member.
- Option C – A reduced annual allowance commencing at retirement with 66⅔% of benefit continued to designated beneficiary upon death of member. For members who retired on or after January 12, 1988, if the beneficiary pre-deceases the retiree, the benefit payable increases based on the factor used to determine the Option C benefit at retirement.

For members who retired prior to January 12, 1988, if the System has accepted Section 288 of Chapter 194 of the Acts of 1998 and the beneficiary pre-deceases the retiree, the benefit payable increases based on the factor used to determine the Option C benefit at retirement.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Valuation Date January 1, 2016

Investment Return 7.75% per year.

The investment return assumption is a long-term assumption based on capital market expectations by asset class, historical returns and professional judgment. We considered analysis prepared by PRIM's investment advisor using a building block approach and using the target asset allocation, expected returns by asset class and risk analysis to determine a long-term expected average annual rate of return.

Annuity Savings Fund Interest Rate 2.00% per year

Amortization Method

Unfunded Actuarial Accrued Liability (UAAL):

Increasing dollar amount at 4% to reduce the Unfunded Actuarial Accrued Liability to zero on or before June 30, 2035. The annual increase in appropriation is further limited to 5.5%.

Early Retirement Incentive Programs (ERI):

Level dollar amount over three years (2002 ERI) and four years (2003 ERI).

Salary Scale

The assumed annual rates for salary increases including longevity are illustrated by the following rates:

<u>Service</u>	<u>Groups 1 & 2</u>	<u>Group 4</u>
0	6.00%	7.00%
1	5.50%	6.50%
2	5.50%	6.00%
3	5.25%	5.75%
4	5.25%	5.25%
5	4.75%	5.25%
6	4.75%	4.75%
7	4.50%	4.75%
8	4.50%	4.75%
9	4.25%	4.75%
Previous valuation	4.25%	4.25%

The salary scale assumption is a long-term estimate derived from historical data, current and recent market expectations and professional judgment.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Cost-of-Living Allowance Cost-of-Living Allowances (COLA) are assumed to be 3% of the pension amount, capped at \$510 per year. Previously, 3% of the pension amount, capped at \$450 per year.

Mortality Rates RP-2000 Mortality Table (base year 2009) with full generational mortality improvement using Scale BB. For disabled members, RP-2000 Mortality Table (base year 2012) with full generational mortality improvement using Scale BB. Previously, RP-2000 Mortality Table Projected to 2017 with Scale AA for healthy annuitants and RP-2000 Mortality Table set forward two years for disabled members.

General Employees: 55% of deaths are job-related.

Police and Fire: 90% of deaths are job-related.

The underlying tables with generational mortality improvement reasonably reflect the mortality experience of the System as of the valuation date based on historical and current demographic data. Further, PERAC reviewed a sampling of a few larger local retirement systems and compared the results with the results found in performing the analysis of the State Retirement System for years 2012 - 2014. For the State Retirement System analysis, the mortality assumptions reflect the recent experience study published in 2014.

Turnover Rates Illustrative turnover rates are shown below:

<u>Creditable Service</u>	<u>Groups 1 & 2</u>	<u>Group 4</u>
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Disability Rates

Illustrative disability rates are shown below:

<u>Attained Age</u>	<u>Groups 1 & 2</u>	<u>Group 4</u>
20	0.0003	0.0010
25	0.0004	0.0012
30	0.0006	0.0018
35	0.0008	0.0026
40	0.0012	0.0038
45	0.0018	0.0058
50	0.0031	0.0098
55	0.0050	0.0160
60	0.0061	0.0197

General Employees: 55% of disabilities are accidental and 45% are ordinary.

Police and Fire: 90% of disabilities are accidental and 10% are ordinary.

Retirement Rates

Illustrative retirement rates are shown below:

<u>Age</u>	<u>Groups 1 & 2</u>	<u>Group 4</u>
50	0.0000	0.0200
51	0.0000	0.0200
52	0.0000	0.0200
53	0.0000	0.0200
54	0.0000	0.0200
55	0.1000	0.0500
56	0.0300	0.0500
57	0.0300	0.0500
58	0.0300	0.0500
59	0.0500	0.0500
60	0.0500	0.1000
61	0.0500	0.1000
62	0.1000	0.2000
63	0.1000	0.2000
64	0.1000	0.2000
65	0.5000	1.0000
66	0.3500	1.0000
67	0.3500	1.0000
68	0.3500	1.0000
69	0.3500	1.0000
70	1.0000	1.0000

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

The turnover, disability and retirement rates are based on PERAC's most recent experience analysis of local retirement systems which reviewed age, gender and job group. The assumptions reflect this analysis as well as professional judgment.

Actuarial Asset Method

The Actuarial Value of Assets is the market value of assets as of the valuation date reduced by the sum of:

- a) 75% of gains and losses of the prior year,
- b) 50% of gains and losses of the second prior year and
- c) 25% of gains and losses of the third prior year.

Investment gains and losses are determined by the excess or deficiency of the expected return over the actual return on the market value. The actuarial valuation of assets is further constrained to be not less than 90% or more than 110% of market value.

Census Data

Census data as of the valuation date were submitted by the Retirement Board.

Asset Data

Asset information is reported annually to the Public Employee Retirement Administration Commission by the Franklin Regional Retirement System.

Dependents

85% of all members will be survived by a spouse. Age assumption for spouses is that males are assumed to be three years older than females.

Administrative Expenses

The anticipated administrative expenses for the fiscal year. For Fiscal Year 2017, the administrative expenses were assumed to be \$450,000 and is anticipated to increase at 4% per year.

The administrative expense assumption is based on information relating to the System's administrative expenses provided by the Retirement System.

SECTION 7 - PLAN MEMBER INFORMATION

Exhibit 7.1 - Active Members by Age and Years of Service as of January 1, 2016

Age	Years of Service									Total
	<u>0 to 4</u>	<u>5 to 9</u>	<u>10 to 14</u>	<u>15 to 19</u>	<u>20 to 24</u>	<u>25 to 29</u>	<u>30 to 34</u>	<u>35 to 39</u>	<u>40 & up</u>	
Under 20	-	-	-	-	-	-	-	-	-	0
	-	-	-	-	-	-	-	-	-	0
20-24	28	-	-	-	-	-	-	-	-	28
	24,558	-	-	-	-	-	-	-	-	24,558
25 to 29	69	5	-	-	-	-	-	-	-	74
	29,069	38,002	-	-	-	-	-	-	-	29,673
30 to 34	40	16	2	-	-	-	-	-	-	58
	33,534	41,877	64,712	-	-	-	-	-	-	36,911
35 to 39	35	22	15	2	-	-	-	-	-	74
	26,724	34,473	49,549	31,007	-	-	-	-	-	33,770
40 to 44	42	20	15	10	3	1	-	-	-	91
	32,644	35,674	49,368	50,317	66,894	86,024	-	-	-	39,725
45 to 49	34	28	19	16	5	7	-	-	-	109
	30,537	32,859	35,228	38,819	52,681	58,119	-	-	-	35,954
50 to 54	41	30	40	31	9	13	9	-	-	173
	34,136	29,449	36,548	35,904	38,127	52,669	59,466	-	-	37,116
55 to 59	45	27	25	31	28	13	6	2	1	178
	37,624	38,092	36,341	35,781	41,151	50,425	48,869	39,502	43,488	39,117
60 to 64	18	11	19	23	15	15	6	6	1	114
	28,875	33,078	32,177	32,818	32,881	40,729	33,121	58,991	65,594	34,844
65 to 69	4	-	3	12	4	5	-	1	-	29
	32,846	-	33,665	34,034	28,224	36,389	-	35,163	-	33,476
70 & up	-	-	1	2	-	-	2	-	-	5
	-	-	43,736	35,200	-	-	29,051	-	-	34,447
Total	356	159	139	127	64	54	23	9	2	933
Average Salary	31,245	34,766	38,914	36,552	40,087	48,629	47,184	52,013	54,541	35,966
					Average Age:		48.3	Average Service:		10.5

Franklin Regional Retirement System
Actuarial Valuation as of January 1, 2016

SECTION 7 - PLAN MEMBER INFORMATION

Exhibit 7.2 - Retired Plan Members and Beneficiaries Annual Pensions as of January 1, 2016

Attained Age	Male		Female		Total	
	Count	Total Payments	Count	Total Payments	Count	Total Payments
<20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	1	1,692	1	5,614	2	7,306
45-49	0	0	0	0	0	0
50-54	2	44,578	0	0	2	44,578
55-59	12	372,179	10	98,599	22	470,778
60-64	24	600,845	69	908,983	93	1,509,828
65-69	52	1,043,852	71	1,015,424	123	2,059,276
70-74	33	633,380	69	1,094,123	102	1,727,503
75-79	36	605,350	36	479,009	72	1,084,359
80-84	21	284,667	42	451,500	63	736,166
85-89	14	152,363	21	166,965	35	319,328
90-94	3	37,333	9	61,110	12	98,443
95+	1	3,543	1	3,527	2	7,071
Total	199	3,779,782	329	4,284,854	528	8,064,636
Average Age	72.4		72.3		72.3	
Average Payment		18,994		13,024		15,274
	37.7%	46.9%	62.3%	53.1%	100.0%	100.0%

Included in above totals is \$38,478 in State reimbursed COLAs.

SECTION 7 - PLAN MEMBER INFORMATION

Exhibit 7.3 - Disabled Plan Members Annual Pensions as of January 1, 2016

Attained Age	Male		Female		Total	
	Count	Total Payments	Count	Total Payments	Count	Total Payments
<20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	2	65,347	0	0	2	65,347
40-44	1	37,759	0	0	1	37,759
45-49	2	55,762	0	0	2	55,762
50-54	4	111,175	0	0	4	111,175
55-59	0	0	1	28,855	1	28,855
60-64	6	153,238	1	4,156	7	157,395
65-69	2	52,020	0	0	2	52,020
70-74	1	32,129	0	0	1	32,129
75-79	1	15,897	0	0	1	15,897
80-84	1	23,427	0	0	1	23,427
85-89	0	0	0	0	0	0
90-94	0	0	0	0	0	0
95+	0	0	0	0	0	0
Total	20	546,756	2	33,011	22	579,767
Average Age	57.9		59.0		58.0	
Average Payment		27,338		16,506		26,353
	90.9%	94.3%	9.1%	5.7%	100.0%	100.0%

Included in above totals is \$5,983 in State reimbursed COLAs.

SECTION 8 - GLOSSARY OF TERMS

Actuarial Accrued Liability – That portion of the Actuarial Present Value of pension plan benefits which is not provided by future Normal Costs or employee contributions. It is the portion of the Actuarial Present Value attributable to service rendered as of the Valuation Date.

Actuarial Assumptions – Assumptions, based upon past experience or standard tables, used to predict the occurrence of future events affecting the commencement, amount and duration of pension benefits, such as: changes in compensation, mortality, withdrawal, disablement and retirement; rates of investment earnings and asset appreciation or depreciation; and any other relevant items.

Actuarial Cost Method (or Funding Method) – A procedure for allocating the Actuarial Present Value of all past and future pension plan benefits to the current year (Normal Cost) and the past (Actuarial Accrued Liability).

Actuarial Gain or Loss (or Experience Gain or Loss) – A measure of the difference between actual experience and that expected based upon the set of Actuarial Assumptions, during the period between the valuation date and the most recent immediately preceding valuation date.

Actuarial Present Value – The dollar value on the valuation date of all benefits expected to be paid to current members based upon the Actuarial Assumptions and the terms of the Plan.

Amortization Payment – That portion of the pension plan appropriation which represents payments made to pay interest on and the reduction of the Unfunded Accrued Liability.

Annual Statement – The statement submitted by the local retirement board to PERAC each year that describes the asset holdings and Fund balances as of December 31 and the transactions during the calendar year that affected the financial condition of the retirement system.

Annuity Reserve Fund – The fund into which total accumulated Member Contributions, including interest, is transferred at the time a member retires, and from which annuity payments are made.

Annuity Savings Fund – The fund in which Member Contributions plus interest credited are held for active members and for former members who have not withdrawn their contributions and are not yet receiving a benefit (inactive members).

Assets – The total value of the investments held by the Plan trust that are for the payment of promised benefits.

Cost of Benefits – The estimated payment from the pension system for benefits for the fiscal year.

Expense Fund – The fund into which the appropriation for administrative expenses is paid and from which all such expenses are paid.

SECTION 8 - GLOSSARY OF TERMS

Funded Ratio – The Actuarial Value of Assets expressed as a percentage of the Actuarial Accrued Liability.

Funding Schedule – The schedule based upon the most recently approved actuarial valuation which sets forth the amount which would be appropriated to the pension system in accordance with Section 22D of M.G.L. Chapter 32.

GASB – Governmental Accounting Standards Board.

Normal Cost – Total Normal Cost is that portion of the Actuarial Present Value of pension plan benefits which is expected to accrue in the current fiscal year. The Employee Normal Cost is the amount of the expected Member Contributions for the current fiscal year. The Employer Normal Cost is the difference between the Total Normal Cost and the Employee Normal Cost.

Pension Fund – The fund into which appropriation amounts as determined by PERAC are paid and from which pension benefits are paid.

Pension Reserve Fund – The fund which shall be credited with all amounts set aside by a system for the purpose of establishing a reserve to meet future pension liabilities. These amounts would include excess interest earnings.

Present Value of Future Benefits – The actuarial present value of the cost to finance benefits payable in the future, discounted to reflect the expected effects of the time value of money and the probabilities of payment.

Special Fund for Military Service Credit – The fund which is credited with amounts paid by the retirement board equal to the amount which would have been contributed by a member during a military leave of absence as if the member had remained in active service of the retirement board. In the event of retirement or a non-job related death, such amount is transferred to the Annuity Reserve Fund. In the event of termination prior to retirement or death, such amount shall be transferred to the Pension Fund.

Total Pension Liability – The portion of the Actuarial Present Value attributable to past service in accordance with the Entry Age cost method as stipulated by GASB Statement Number 67 (GASB 67).

Unfunded Actuarial Accrued Liability – The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets.